

CLAIMS

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1. A safety shield system for a needle cannula having a lumen therethrough for transfer of fluid from a body having a generally tubular end portion, said safety shield system comprising a generally tubular clip member having a plurality of spaced laterally projecting resilient fingers, a generally tubular recipricable shield including a first portion surrounding said clip member, a second portion normally surrounding said needle cannula and a plurality of spaced axially extending inwardly opening channel-shaped tracks on inside surface of said shield receiving said laterally projecting resilient fingers of said clip member and guiding said shield axially from a first position wherein said shield second portion surrounds said needle cannula to a second position wherein said needle cannula is exposed, and a spring resiliently biasing said shield axially to normally extend said shield second portion to surround said needle cannula, wherein at least one of said channel-shaped tracks includes an opening which receives one of said fingers when said shield is first retracted to said second position and then extended to said first position by said spring and locking said shield in said first position.

2. The safety shield system defined in Claim 1, wherein said one of said fingers includes a hook-shaped end portion opening toward said first portion of said shield and said opening extends through a side wall of said shield receiving said finger hook-shaped end portion therethrough, locking said shield in said first position surrounding said needle cannula.

3. The safety shield system defined in Claim 1, wherein each of said plurality of channel-shaped tracks includes an opening through a side wall of said shield receiving a finger of said clip member and locking said shield in said first position surrounding said needle cannula.

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4. The safety shield system defined in Claim 1, wherein said one of said channel-shaped tracks includes an inwardly projecting resilient finger portion adjacent said opening resiliently biasing said one of said fingers inwardly and releasably retaining said shield in said first position prior to retraction of said shield to said second position and said resilient finger portion in said track initially guiding said one of said fingers over said opening when said shield is retracted to said second position.

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5. The safety shield system defined in Claim 1, wherein said safety shield system includes a removable cup-shaped cap initially received over said shield.

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6. The safety shield system defined in Claim 5, wherein said needle cannula includes a generally cup-shaped hub and said needle cannula extends through said hub to define a first portion extending into said body portion to puncture a closure in a container opening received in said body, and a second end portion extending into said shield, said cup-shaped cap configured to receive and retain said safety shield system and said needle cannula and hub assembly upon removal of said assembly from said body and reversal of said assembly to receive said first end portion of said needle cannula in said cap providing for safe disposal of said safety shield system and needle cannula.

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7. The safety shield system as defined in Claim 6, wherein said cup-shaped cap includes internal radially projecting ribs which receive and retain said assembly.

5 8. The safety shield system defined in Claim 1, wherein said plurality of fingers each include a U-shaped portion integrally connected at one end to a tubular body portion of said clip member and a radially projecting hook-shaped portion received in said channel-shaped tracks.

10 9. The safety shield system defined in Claim 8, wherein said spring is a spiral spring having one end received in said U-shaped portions of said fingers and an opposed end biased against said shield.

15 10. The safety shield system defined in Claim 9, wherein said shield is generally cup-shaped having an open end received around said clip member and a generally closed end having a central opening therethrough receiving said needle cannula, and said spiral spring having a second end portion biased against said generally closed end of said shield.

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11. A pen needle and safety shield system, said pen injector having a generally tubular body portion for receiving a container of fluid having an open end and a closure in said open end, a needle cannula assembly including a hub and needle cannula extending through said hub having a first end extending into said pen injector body and a second end extending away from said pen injector body for injection and transfer of fluid from said body to a user, said safety shield system including a generally tubular clip member having a plurality of circumferentially spaced laterally projecting resilient fingers, a generally tubular recipricable shield including a first portion surrounding said clip member, a second portion normally surrounding said second end of said needle cannula and a plurality of spaced axially extending inwardly opening channel-shaped tracks on an inside surface of said shield receiving said laterally projecting resilient fingers of said clip member and guiding said shield axially from a first position wherein said shield second portion surrounds said needle cannula second end to a second position wherein said second end of said needle cannula is exposed, and a spring resiliently biasing said shield axially to normally extend said shield second portion to surround said needle cannula second end, wherein at least one of said channel-shaped tracks includes an opening which receives one of said fingers when said shield is first retracted to said second position and then extended to said first position by said spring and locking said shield in said first position to limit access to said second end of said needle cannula.

12. The pen needle and safety shield system defined in Claim 11, wherein said one of said fingers includes a hook-shaped end portion opening toward said first portion of said shield and said opening extends through a side wall of said shield receiving said hook-shaped end portion of said finger therethrough, locking said shield in said first position surrounding said second end of said needle cannula.

13. The pen needle and safety shield system defined in Claim 11, wherein each of said plurality of channel-shaped tracks in said shield includes an opening extending through said shield receiving a finger and locking said shield in said first position surrounding said second end of said needle cannula.

14. The pen needle and safety shield system defined in Claim 11, wherein said one of said channel-shaped tracks in said shield includes an inwardly projecting resilient inwardly projecting finger portion adjacent said opening resiliently biasing said one of said fingers inwardly and releasably retaining said shield in said first position prior to retraction of said shield to said second position and said resilient finger portion in said track initially guiding said one of said fingers over said opening when said shield is first extended to said first position from said second position.

15. The pen needle and safety shield system defined in Claim 1, wherein said safety shield system includes a removable cup-shaped cap having an open end received over said shield.

16. The pen needle and safety shield system as defined in Claim 15, wherein said cup-shaped cap is configured to receive said safety shield system and needle cannula assembly upon removal of said safety shield system and needle cannula assembly from said body and reversal of said needle cannula assembly and safety shield system to receive said first end portion of said needle cannula in said cap providing for safe disposal of said needle cannula assembly.

17. The pen needle and safety shield system defined in Claim 11, wherein said plurality of fingers each includes a U-shaped portion integrally connected at one end to a tubular body portion of said clip member and a radially projecting hook-shaped end portion received in said channel-shaped tracks.

18. The pen needle and safety shield system defined in Claim 17, wherein said spring is a spiral spring having one end received in said U-shaped portions of said fingers and an opposed end biased against said shield.

19. The pen needle and safety shield system defined in Claim 18, wherein said shield is generally cup-shaped having an open end received around said clip member and a generally closed end having a central opening therethrough receiving said needle cannula and said spiral spring having a second end portion biased against said generally closed end of said shield.

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20. The pen needle and safety shield system defined in Claim 11, wherein said clip member includes a generally tubular body portion including a plurality of radially extending ribs and said shield includes a plurality of axially extending grooves which receives said ribs, preventing rotation of said shield relative to said clip member and
5 guiding said shield axially between said first and second positions.

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21. A pen needle and safety shield assembly, comprising:
a pen needle having a generally tubular body portion including an open end, a
needle hub member having a generally tubular body portion received over said pen
10 needle open end, a needle cannula secured by said needle hub having a first end
extending into said tubular body portion of said pen needle and an opposed second
end, a clip member having a generally tubular body portion mounted on said tubular
body portion of said hub member having a plurality of radially extending ribs, a
generally cup-shaped retractable shield including a tubular body portion having an
15 open end, a generally closed end portion having a central opening therethrough
receiving said second end portion of said needle cannula therethrough, and a plurality
of radial grooves extending through said tubular body portion from adjacent said
generally closed end portion to adjacent said open end of said tubular body portion
receiving said radially extending ribs of said clip member, and a cup-shaped cap
20 having a plurality of inwardly projecting ribs received in said grooves in said shield to
adjacent said ribs on said clip member preventing retraction of said shield when said
cap is located on said shield.

22. The pen needle and safety shield system defined in Claim 21, wherein said clip member further includes a plurality of circumferentially spaced laterally projecting resilient fingers, and said shield including a plurality of circumferentially spaced axially extending inwardly opening channel-shaped tracks receiving said laterally projecting resilient fingers of said clip member.

23. The pen needle and safety shield system defined in Claim 22, wherein said safety shield system includes a spring resiliently biased against said generally closed end portion of said shield from a first position wherein said shield surrounds said needle cannula second end and said inwardly opening channel-shaped tracks including an opening therethrough receiving said laterally projecting fingers of said clip member and locking said clip member in said extended first position following retraction of said shield to a second position, wherein said second end of said needle cannula is exposed.